

WHAT IS CLAIMED IS:

1. A printhead comprising:
a fluid chamber having an orifice;
a fluid drop forming mechanism associated with the fluid chamber and being operable to apply to fluid present in the fluid chamber energy sufficient to cause a fluid drop to be ejected from the orifice; and
a fluid drop steering device associated with the fluid chamber and being operable to optionally apply to fluid present in the fluid chamber energy insufficient to cause drop formation prior to the fluid being ejected from the orifice, the fluid drop steering device being distinct from the fluid drop forming mechanism.
2. The printhead according to Claim 1, wherein the fluid drop steering device is a mechanical actuator located in the fluid chamber.
3. The printhead according to Claim 2, wherein the mechanical actuator is a paddle.
4. The printhead according to Claim 3, the fluid chamber having a side wall, wherein the paddle is located adjacent to the side wall of the fluid chamber.
5. The printhead according to Claim 2, wherein the mechanical actuator is a valve.
6. The printhead according to Claim 1, wherein the fluid drop steering device is a heater operatively associated with the fluid chamber.
7. The printhead according to Claim 6, the fluid chamber having a side wall, wherein the heater is formed as a portion of the side wall.

8. The printhead according to Claim 6, wherein the heater is in electrical communication with electrical contacts located outside of the fluid chamber.

9. The printhead according to Claim 6, wherein the heater is located in the fluid chamber.

10. The printhead according to Claim 9, the fluid chamber having a side wall, wherein the heater is located adjacent to the side wall.

11. The printhead according to Claim 9, wherein the heater is coupled to the fluid drop forming mechanism.

12. The printhead according to Claim 9, orifice being located in a nozzle plate, wherein the heater is located adjacent to the nozzle plate.

13. The printhead according to Claim 6, wherein the heater is located outside the fluid chamber.

14. The printhead according to Claim 13, the fluid chamber having a side wall, wherein the heater is located adjacent to the side wall.

15. The printhead according to Claim 1, the printhead further comprising:

a fluid reservoir in fluid communication with the fluid chamber, wherein the fluid drop steering device is a heater operatively associated with the fluid reservoir.

16. The printhead according to Claim 1, wherein the fluid drop steering device is a plurality of electrodes operatively associated with the fluid chamber.

17. The printhead according to Claim 1, wherein the fluid drop forming mechanism comprises a heater operatively associated with the fluid chamber.

18. The printhead according to Claim 1, wherein the fluid drop forming mechanism comprises a piezoelectric actuator operatively associated with the fluid chamber.

19. The printhead according to Claim 1, wherein the fluid drop forming mechanism comprises an actuator movable between a plurality of positions.

20. The printhead according to Claim 1, wherein the fluid drop forming mechanism is a drop on demand drop forming mechanism.

21. The printhead according to Claim 1, wherein the fluid drop forming mechanism is a continuous drop forming mechanism.

22. The printhead according to Claim 1, wherein the fluid drop steering device comprises a plurality of steering devices positioned about the orifice of the fluid chamber.

23. The printhead according to Claim 1, wherein the fluid drop steering device comprises a mechanical actuator movable between a plurality of positions and operatively associated with the fluid chamber.

24. The printhead according to Claim 1, the fluid chamber having a side wall, wherein the fluid drop steering device comprises a portion of the side wall of the fluid chamber.

25. The printhead according to Claim 1, wherein the fluid drop steering device is located within the fluid chamber.

26. The printhead according to Claim 1, wherein the fluid drop steering device is located removed from the fluid chamber.

27. A method of ejecting a fluid drop comprising:
providing a fluid having a drop formation energy threshold;
optionally applying to the fluid an energy below the drop formation energy threshold; and

forming a fluid drop by applying to the fluid an energy exceeding the drop formation energy threshold, wherein application of the energy to the fluid below the drop formation energy threshold, when applied, alters a trajectory of the fluid drop formed by the application of energy to the fluid exceeding the drop formation energy threshold.

28. The method according to Claim 27, wherein optionally applying to the fluid the energy below the drop formation energy threshold occurs prior to the application of energy to the fluid exceeding the drop formation energy threshold.

29. The method according to Claim 28, wherein optionally applying to the fluid the energy below the drop formation energy threshold continues during the application of energy to the fluid exceeding the drop formation energy threshold

30. The method according to Claim 27, wherein optionally applying to the fluid the energy below the drop formation energy threshold occurs during the application of energy to the fluid exceeding the drop formation energy threshold.

31. The method according to Claim 27, wherein optionally applying to the fluid the energy below the drop formation energy threshold comprises heating the fluid to a temperature less than a temperature needed to vaporize a portion of the fluid.

32. The method according to Claim 31, wherein heating the fluid changes a fluid viscosity characteristic thereby altering the trajectory of the formed fluid drop.

33. The method according to Claim 32, wherein fluid viscosity is decreased when heat is applied to the fluid.

34. The method according to Claim 32, wherein fluid viscosity is increased when heat is applied to the fluid.

35. The method according to Claim 27, wherein optionally applying to the fluid the energy below the drop formation energy threshold comprises conducting an electrical current through a portion of the fluid.

36. The method according to Claim 27, wherein optionally applying to the fluid the energy below the drop formation energy threshold comprises mechanically acting on a portion of the fluid.

37. The method according to Claim 36, wherein mechanically acting on a portion of the fluid changes a fluid velocity characteristic thereby altering the trajectory of the formed fluid drop.

38. The method according to Claim 37, wherein the fluid velocity characteristic is decreased when the fluid is mechanically acted on.

39. The method according to Claim 37, wherein the fluid velocity characteristic is increased when the fluid is mechanically acted on.

40. The method according to Claim 27, wherein optionally applying to the fluid the energy below the drop formation energy threshold comprises changing a fluid velocity characteristic of the fluid.

41. The method according to Claim 27, wherein optionally applying to the fluid the energy below the drop formation energy threshold comprises changing a fluid viscosity characteristic of the fluid.